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ANATOMY OF LABOUR RESERVES IN THE BALTIC COUNTRIES: A SNAPSHOT 15 YEARS AFTER THE EU ACCESSION



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ABBREVIATIONS

AMECO - annual macro-economic database CIS - Commonwealth of Independent States CSB - Central Statistical Bureau of Latvia GCI - Global Competitiveness Index of the World Economic Forum GDP - Gross Domestic Product EC – European Commission EU – European Union EU7 - Germany, Austria, Denmark, the Netherlands, Sweden, Czechia and the UK ISCED -- International Standard Classification of Education ISCO - International Standard Classification of Occupations NAIRU - non-accelerating inflation rate of unemployment NUTS - Nomenclature of Territorial Units for Statistics OECD - Organisation of Economic Co-operation and Development PISA - Programme for International Student Assessment pp - percentage point UK - United Kingdom

ABSTRACT

This paper investigates internal and external labour reserves in Latvia, Estonia and Lithuania. We find considerable internal labour reserves in the form of still high natural rate of unemployment and in hidden unemployment as many economically inactive people are available for work but are not actively engaged in job seeking. The employment rate is particularly low for upper-middle-aged men, especially those without a tertiary education degree, which is likely to reflect a low incidence of lifelong learning, low digital skills and rapidly deteriorating health condition. We document low employment of youth, mirroring low prevalence of apprenticeships. In Lithuania and Latvia, there is also a postponed entry of young women into the labour market. Moreover, the employment rate of Estonian women of fertile age who hold a tertiary education degree is consistently lower than that of their EU counterparts. These internal labour reserves total more than 25 thousand people in Estonia, 55 thousand in Latvia and 85 thousand in Lithuania, corresponding to 4%-7% of the total employment in these countries. Particular targeting on ethnic minorities and people living in disadvantaged regions is essential for activating these labour reserves. Moreover, we point to considerable external labour reserves in the form of more than a half million Baltic nationals currently residing in wealthier EU countries.

Key words: labour market, employment, unemployment, participation, migration

JEL codes: J21, J82, E24

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INTRODUCTION

A chronic shortage of jobs and double-digit unemployment rates in the Baltics were rooted in the painful transition of the 1990s and were common labour market features for almost the whole period since Latvia, Lithuania and Estonia restored independence in 1991. With just two exceptions. The first exception was the period of a short-lived economic overheating which culminated a couple of years after the EU accession in 2004. A unique combination of several factors – increasing availability of credit and the resulting real estate boom, inflows of EU funds and the emergence of emigration opportunities to high-wage EU countries – pressed unemployment well below the natural rate and provided the first incidence of labour shortage in the modern history of the Baltic countries. However, the shortage of jobs was quickly back on the agenda when the bursting of the domestic cyclical bubbles coincided with the global economic slowdown of 2009. Flexible labour markets of the Baltic countries allowed firms to quickly adjust wages and employment (Fadejeva and Krasnopjorovs (2015)); as a result, unemployment rate tripled to almost 20% in 2010. At that time, it seemed that the mirage of a nearly full employment will never return.

Nevertheless, a few years later the Baltic countries managed to return to one-digit unemployment rates. Choosing internal adjustment as a strategy to exit the crisis and maintaining a fixed exchange rate vis-à-vis the euro (Åslund and Dombrovskis (2011)) determined a fast output recovery, while flexible labour markets quickly secured a solid rise in labour demand. At the same time, the second massive emigration wave to wealthier EU countries, boosted by the crisis, dampened labour supply. This time severe economic overheating was avoided. However, the negotiating power of employees is gradually growing and firms increasingly claim they lack labour for expansion of their businesses. As a result, wages have risen somewhat faster than labour productivity for several years in a row, and the inactive working age population and unemployed are increasingly perceived as a potential labour reserve rather than people having reached a dead end.

To date, this second remission from the shortage of jobs disease has lasted for about five years, raising a question whether these improvements are permanent or merely a by-product of a strong cyclical upswing. The current cyclical expansion masks numerous labour market mismatches so that they are barely seen in the aggregate statistical data. Although many aggregate indicators look decent by EU standards, in reality, labour market performance is uneven across different population groups and regions. Labour shortages in some occupations and locations often coexist with underemployment elsewhere. The Baltic countries should seize the moment to address these labour market challenges before the current cyclical expansion gradually erodes the cost competitiveness. Appropriate public policy should activate the available labour reserves and raise the productivity of work force, with a special focus on disadvantaged population groups. This paper quantifies the available labour reserves, identifies the population groups requiring specific attention from policy makers and outlines the main policy directions to activate them.

The paper is structured as follows. Section 1 explores the internal labour reserves by reviewing the labour market performance in the Baltic countries and comparing it to EU peers both at the aggregate level and in a breakdown by population groups. Section 2 is mostly devoted to the external labour reserves, mainly focusing on the potential

of return migration (of Baltic nationals having recently emigrated to wealthier EU countries), but it also contains a broader examination including the neighbouring non-EU countries. Finally, Section 3 reviews the main policy directions that might help to activate the labour reserves.

1. ANATOMY OF INTERNAL LABOUR RESERVES

The population of the three Baltic countries totals about 6 million people, roughly half of which are employed, with the rest being job seekers, economically inactive or outside the working age (see Chart 1). The aggregate pool of job seekers currently consists of 200 thousand people, showing a notable decrease from nearly 600 thousand people at the lowest point of the economic downturn in 2010. However, this may represent only a part of the domestic labour pool available in the Baltic countries as a significant part of unemployment may be hidden or the employment rate may be affected by cyclical swings and temporary demographic transitions.



Chart 1 **Population structure in the Baltic countries by economic activity** (thousands of people; in 2018)

Source: Author's calculations based on Eurostat data.

We begin by seeking for internal labour reserves through making international comparisons of several aggregate labour market indicators like employment, participation and unemployment rates (including also natural and hidden unemployment) as well as adjusting the participation rate to the changing age structure of population, followed by an analysis of the labour market performance of particular population groups.

1.1 At the aggregate level

The employed-to-population ratio could be decomposed into (1) the share of working age¹ people in total population; (2) the share of economically active people in working age population; (3) the share of employed in economically active population. In other

¹ Unless provided otherwise, we refer to age 15–74 as the working age, in line with the definition of the International Labour Organization.

words, the employed-to-population ratio by definition is a product of working age population share, participation rate and inverse unemployment rate:

Employed	_ Working age	ho Economically active	Employed
Population	Population	Working age	Economically active

The employed-to-population ratios in the Baltic countries are somewhat above the EU average: about 6 pp, 4 pp and 2 pp higher in Estonia, Lithuania and Latvia respectively. This is mainly a result of a high participation rate. In all three Baltic countries, the participation rates currently are historically high and considerably exceed the EU average. It was not always like that. At the beginning of the 21st century, the participation rates in the Baltics were roughly similar to those of the EU; the subsequent increase in Estonia was somewhat faster and more even (i.e. less affected by the economic slowdown) than in Latvia and Lithuania. The impact of the remaining two factors is not large, suggesting that the unemployment rates and the shares of working age population in the Baltics do not differ much from the EU average. However, the contribution of the unemployment rate to the deviation of the employed-to-population ratio from the EU average is slightly positive for Estonia and Lithuania, reflecting the fact that in 2018 the unemployment rates in these countries were somewhat lower than in the rest of the EU. At the same time, in Latvia's case the contribution is slightly negative since the unemployment rate still exceeds the EU average (see Charts 2 and A1).

Chart 2

Decomposition of the employed-to-population ratio's deviation from the EU average (pp; contributions; in 2018)



Source: Author's calculations based on Eurostat data.

A rising participation rate and a gradual decrease in the unemployment rate both contributed to an increase in the number of people employed over the recent years, while the shrinking population and share of working age population hindered employment growth (see Chart 3).



Chart 3 **Decomposition of the annual employment growth in the Baltic countries** (pp)

Source: Author's calculations based on Eurostat data.

There are two reasons why employment growth of about 2% per year in the absence of any increase in population (as it was recorded in the Baltics during the recent years) is unsustainable. First, the recent improvement in participation rates was partly driven by the temporary demographic transition, and this effect will work in the opposite direction over the next years. Second, the decline in unemployment is likely to slow down: the lower and the more structural (rather than cyclical) unemployment is, the harder it is to achieve a further decrease.

Over the most recent years, the headline participation rates benefited from a change in the population's age structure, particularly a notable decrease of the share of young people (an age group with very low participation in the labour market). Thus, the participation rates in the Baltics are currently about 2 pp higher than they would have been if the population structure had remained unchanged from the beginning of the century. For Latvia in particular, this suggests that about one third of the increase in the participation rate seen over the last 15 years could be attributed to the changing age structure of population (see Chart 4). When the participation rates are adjusted for the age structure, the Baltic countries turn out to be somewhat lagging behind the EU leaders in terms of the aggregate participation of the working age population in the labour market (see Chart A2).





Source: Author's calculations based on Eurostat data. Note. Adjusted participation rate reflects the population age structure at its level in 2002.

This temporary boost in the participation rates on account of the demographic transition is unlikely to persist. During the next few years, the narrow youth cohorts of today will enter the prime age group (an age group with high participation in the labour market), while the currently wide cohort of prime age population will approach the upper-middle-age group which is characterised by a steep decline in labour market participation. Looking at the Eurostat population projections to find out how the age structure of population is likely to evolve in the following years, one could estimate how quickly this demographic transition dividend is going to vanish. Until 2030, changes in the population's age structure are likely to decrease the aggregate (headline) participation rate by about 2.5 pp, 4 pp and 5 pp in Estonia, Latvia and Lithuania respectively (see Chart 5). In all three cases, the population's age structure in 2030 is likely to have a less favourable effect on the headline participation rate than it had in 2002 (nevertheless, the headline participation rate will remain higher than in 2002 owing to increasing participation in individual age groups).

Over the most recent years, the Baltic countries managed to maintain a broadly unchanged size of the labour force despite population declines that were rather significant in Lithuania and Latvia. Rapid erosion of the demographic transition dividend means that the situation is likely to reverse in the following years: labour force will decrease faster than population. This could put an additional drag on employment growth. In order to offset the negative effect coming from the changing population age structure, the participation rate in each age group should grow by about 0.3 pp annually. This is comparable to the actual increases of the adjusted participation rates recorded in Latvia and Lithuania since the beginning of the century. Therefore, the headline participation rate is unlikely to rise (or at least not as rapidly as before) even if labour market participation in each individual age group continues to grow at the current speed. This, however, does not imply that activation of labour reserves would bring no benefits in terms of participation or employment; it could rather mean that without activation of the available labour force both the headline participation rate and the number of employed people are going to shrink.

Chart 5

The impact of changes in the population's age structure on the headline participation rate (pp; compared to the age structure in 2002)



Source: Author's calculations based on Eurostat data.

Unemployment has decreased markedly from its peak in 2010: as unemployment becomes increasingly more structural, its decline is likely to slow down.

Understanding whether unemployment is mainly cyclical or structural is crucial both for determining the preferable path of macroeconomic policy and for forecasting purposes. Cyclical unemployment is a result of the economic activity level deviating from its long-run potential: it occurs when the headline GDP differs from the potential GDP. When GDP growth falls below its potential, unemployment increases and this is reflected in a positive cyclical component. Conversely, when the GDP exceeds its potential level, unemployment goes down, reflected in a negative cyclical component.

The natural rate of unemployment or NAIRU is the unemployment rate that prevails when the economic activity stands at its potential level. Although it is not directly observed, it can be estimated using the Phillips or Beveridge curve models. Natural unemployment mainly consists of frictional and structural components. Frictional employment is inevitable as a by-product of labour force experiencing short-term job seeking spells when changing jobs; it represents people moving between jobs and usually is not considered as a challenge. Structural unemployment, in turn, represents unemployment coexisting with unfilled jobs: the higher the structural unemployment, the less efficient the matching between the unemployed and vacancies. It happens, for instance, when the unemployed do not possess the skills required for the available vacancies or the location of the unemployed and that of the vacancies is different; or when excessively high taxes on labour income and excessively high minimum wage are obstacles to entering into an employment contract.

Headline unemployment = Natural unemployment + Cyclical unemployment Natural unemployment = Frictional unemployment + Structural unemployment In case of a positive and persistently large cyclical component of unemployment, stimulating aggregate demand would be the first policy option to bring unemployment down. Even in the case of a decreasing (but positive and large) cyclical component, a temporary economic stimulus can speed up the decline of unemployment towards its natural rate without creating inflationary pressures and losing cost competitiveness. Conversely, if the cyclical component of unemployment is negative, zero or even marginally positive (but decreasing), an economic stimulus may push wages and inflation up (and competitiveness down) without any long-lasting impact on unemployment is to implement measures combating the high structural component (i.e. raise the matching efficiency between the unemployed and vacancies).

In the Baltics, unemployment rates traditionally have exceeded the EU average and most of the time since the restoration of independence in 1991 were measured in double digits. The main reason for that is the high natural rate of unemployment (more precisely, that of the structural unemployment) due to which unemployment remained relatively high also during the expansion phase of the economic cycle. Direct job creation and aggregate demand stimulus that would be a standard recipe to remedy cyclical unemployment are not relevant anymore. Following a period of marked growth during the economic slowdown of 2009–2010, cyclical unemployment is no longer evident in the Baltics since about 2013 (see Chart 6).



Source: AMECO data.

Three observations could be made based on the natural rate of unemployment developments in the Baltic countries. First, the natural rate of unemployment has decreased in all three Baltic countries since the beginning of the century. Prior to the EU accession, the natural unemployment rate was measured in double digits, particularly in Latvia and Lithuania. Since then, many factors such as the growing popularity of higher education as well as emigration and generation renewal contributed to the decrease of the natural unemployment rate below the 10% threshold.

Second, it seems that the natural rate of unemployment in Latvia over the years was consistently higher than that in Estonia, with Lithuania being in between. According to AMECO estimates, in 2018 the natural rate of unemployment in Latvia, Lithuania and Estonia was 8%, 7% and 6% of the labour force respectively².

Third, the Baltic countries still look modest by EU standards in terms of the natural unemployment rate: 20 EU countries had achieved lower natural rates of unemployment than Latvia by 2018, of which 11 countries also had lower natural rates of unemployment than Estonia (see Chart 7). This implies that a high natural rate of unemployment (structural unemployment) remains a challenge for the Baltic countries (particularly for Latvia) and potentially a significant source of internal labour reserves (for instance, the natural rate of unemployment is only about 3% in Czechia and Germany).

Chart 7



(pp; contributions; in 2018)



Source: Author's calculations based on AMECO data.

One might question the relevance of the natural unemployment estimates, arguing that it is just a result of an econometric exercise representing filtered headline unemployment series³. Therefore, we have complemented AMECO's natural unemployment rate estimates with a direct assessment of labour market mismatches in the Baltic counties as well as with an unemployment duration analysis and several specifications of the Phillips and Beveridge curves.

² An independent estimation of natural and cyclical components of unemployment is outside the scope of this paper. Therefore, we rely on AMECO estimates, subsequently supporting the evidence with additional variables – the labour market mismatch index and several specifications of the Phillips and Beveridge curves. A reader interested in technical details of unemployment decomposition into natural and cyclical components might refer to Krasnopjorovs (2015) for both the literature review on the topic and methodology.

³ Headline unemployment and NAIRU have the same historical averages by construction, while NAIRU persistency might depend on filter parameters. For instance, Ebeke and Everaert (2014) admitted that NAIRU volatility depends on the assumption about the signal-to-noise ratio of the Kalman filter (variance of the error term in the transition equation of the NAIRU relative to the one of the error term in the Phillips curve equation) but claimed that their NAIRU estimates were robust to reasonable modifications of this ratio.

There is a strong positive relationship at the EU level between the natural unemployment and labour market mismatches. For instance, Estonia has both a lower natural rate of unemployment and lower labour market mismatch index compared to Latvia and Lithuania (see Chart 8). One more observation: both the natural rate of unemployment and labour market mismatches increased somewhat just after the economic slowdown. The natural unemployment's reaction to macroeconomic conditions is referred to as unemployment hysteresis: people that were laid off for cyclical reasons may gradually lose employability as their unemployment spell increases, and after some time they might complement the pool of structurally unemployed. In the Baltics, low-skilled employees, particularly those employed in the construction sector, were affected the most by the layoffs which took place during the economic crisis. They found it difficult to get a new job, giving rise to labour market mismatches and structural unemployment. Along with the economic recovery, labour mismatches decreased gradually in all three Baltic countries and currently are somewhat lower than just before the EU accession (see Chart 9; this is again in line with AMECO estimates of the natural rate of unemployment dynamics). It has to be also noted that in Estonia the strengthening of labour market mismatches during 2009–2010 was less persistent than in Latvia and Lithuania; this corresponds to the somewhat less persistent increase of the natural rate of unemployment seen in Chart 6.

Chart 8

Natural unemployment rate and labour market mismatches in the EU countries (2016–2018 average)





Labour market mismatch index and NAIRU

Source: Author's calculations based on Eurostat and AMECO data.

Notes. Labour market mismatch index reflects unemployment rate differentials across ISCO occupation groups (weighted by the share of occupation group in total employment).

For instance, if unemployment is similarly high in all occupational groups, this reflects cyclical recession and has no impact on index value. In turn, if high unemployment in one occupation coexists with low unemployment in another occupation, this reflects labour market mismatches and increases the index value. The value of a labour market mismatch index is reported for comparison purposes only and has no direct interpretation.

In Latvia (2018), unemployment exceeded the average in the following occupational groups: elementary occupations, plant and machine operators, craft and related trades workers. In other occupations, unemployment was lower than the average.

> Structural unemployment tends to be more long-term than cyclical. Unemployment duration analysis shows that the share of long-term unemployed in Latvia is higher

than in Estonia and Lithuania (see Chart A3), supporting the view that the natural rate of unemployment in Latvia is likely to be the highest among the Baltic countries, with that in Estonia being the lowest.



Labour market mismatch index by occupation in the Baltic countries (by year)



Source: Author's calculations based on Eurostat data.

Note. The numbers reflect major occupation groups according to ISCO-08 structure: 1: Managers; 2: Professionals; 3: Technicians and associate professionals; 4: Clerical support workers; 5: Service and sales workers; 6: Skilled agricultural workers; 7: Craft and related trades workers; 8: Plant and machine operators, and assemblers; 9: Elementary occupations.

The next step to check the consistency of AMECO estimates regarding the natural unemployment dynamics (as well as to obtain further insights on this phenomenon) is the construction of several specifications of the Phillips and Beveridge curves.

The Beveridge curve reflects a negative relationship between the unemployment rate and vacancy rate (or any other proxy of labour shortage), whereas the Phillips curve represents a negative relationship between the unemployment rate and wage growth (or inflation). The movement along the curves reflects changes in the cyclical position of an economy. For instance, the unemployment-to-vacancy ratio rises during recessions and falls during expansions. Likewise, high unemployment during recessions reflects abundant labour reserves that hinder wage growth and thus also consumer price inflation. When a recession turns into expansion, the economy moves from the southeast to north-west quadrants of the Beveridge and Phillips curve diagrams, as shown in Charts A4 and A5 for the Baltic countries.

Changes in the natural rate of unemployment (reflecting labour market efficiency or the efficiency with which the unemployed are matched with the available vacancies) are represented by shifts of the Beveridge and Phillips curves. An upward shift (towards the north-east quadrant) reflects an increase of the natural unemployment rate, meaning that at a given unemployment level there are more vacancies and there is a higher pressure on wages. A downward shift (towards the south-west quadrant) represents a lower natural rate of unemployment, suggesting that at a given unemployment level there are less unfilled jobs and the wage pressure is lower.

This paper employs two different specifications for the Beveridge curve and also two specifications for the Phillips curve (four specifications altogether). The Beveridge

curve is constructed using either the vacancy rate (the ratio of unfilled jobs to total jobs; published by Eurostat) or the share of entrepreneurs claiming labour shortage as a substantial business obstacle (survey data published by the EC). The Phillips curve is constructed using either annual growth of compensation per employee or consumer price inflation excluding taxes⁴ (both published by Eurostat).

It is obvious that the Beveridge and Phillips curves for Latvia are placed somewhat higher (closer to the north-east quadrant) than those of the two other Baltic countries, supporting the evidence that the natural rate of unemployment in Latvia might be somewhat higher than in Estonia and Lithuania (see Chart 10)⁵. Moreover, there is also evidence of a leftward shift of the Beveridge and Phillips curves over time⁶ (see Charts A4 and A5), supporting the view that the natural rate of unemployment in all three Baltic countries has decreased since the beginning of the century.





Source: Author's calculations based on Eurostat and EC data. Notes. The dots represent annual observations for the Baltic countries over 2002–2018 (a shorter time span in some graphs reflects unavailability of data). The curves are logarithmic trends constructed for each country separately by minimizing squared deviations from the actual data. The red colour denotes observations for Latvia, the green one – for Lithuania and the blue one – for Estonia.

⁴ Similar results would be obtained when employing any of the core inflation indicators such as constant tax rate inflation excluding changes in energy, food or administered prices.

⁵ Although the Phillips curve tends to be steeper for Latvia, it is also placed higher in the range of the more common (up to 13%) unemployment rates.

⁶ The only Beveridge curve specification without a leftward shift is the one that employs the vacancy rate (see Chart A5). However, in this case the starting point of the Beveridge curve is only 2008 because of the unavailability of internationally comparable vacancy statistics prior to 2008.

Internal labour reserves do not necessarily exist only in the form of unemployment. Part of labour reserves may be hidden from the official unemployment statistics. Some jobless people are not counted as unemployed due to falling outside a job seekers definition of "is available to start work within the next two weeks and has actively sought employment at some time during the last four weeks" (Eurostat (2019)). Consequently, they either do not actively seek work (for instance, because they do not believe in finding work; further referred to as 'discouraged workers') or are not ready to start work in two weeks' time. Official statistics define these people as "marginally attached to the labour force" and regard them as economically inactive. Moreover, some part-time workers wish but are unable to find a full-time job. Adding these groups of people to the official unemployment rate, we arrive at several measures of broad unemployment.

Broad unemployment indicators reveal that actual unemployment in Latvia and Estonia is about twice bigger than official unemployment (job seekers) statistics suggest. While the job seekers rate in Latvia and Estonia is 7% and 5% respectively, the corresponding broad unemployment indicators are close to 13% and 11%. Although the job seekers rate follows a clear cyclical pattern in all three Baltic economies, particularly in Latvia this is true for hidden unemployment components as well. The number of discouraged workers, involuntary part-time employees and those available for work but not seeking work increased significantly during the previous economic crisis and afterwards decreased markedly. Currently both official and hidden unemployment indicators in all three Baltic countries are lower than at the time of the EU accession (see Chart 11).

Chart 11



Broad unemployment indicators

Source: Author's calculations based on Eurostat data.

Some forms of hidden unemployment are more common for the Baltic countries than others. On the one hand, the number of discouraged workers who are not looking for a job because they do not believe in finding one is considerably higher in the Baltics if compared to the rest of the EU (see Chart A6). Also, the total amount of people who

report that they are available for work but do not seek it in Estonia and Latvia is well above the EU average. On the other hand, the number of underemployed part-time workers and the number of people who are seeking work but are not available for work during the next two weeks tends to be lower in the Baltics than in many other EU countries. This suggests that labour reserves in the form of hidden unemployment are mainly locked in economic inactivity where many people, who are available for work, do not seek it (either because they do not believe in finding work or for other reasons).

Moreover, some people might not be looking for a job for non-economic reasons such as the necessity to take care of small children or the elderly as well as due to own disability or being a student. Hence, they might not be covered even by the broad unemployment measures. The only way to find out the extent to which these reasons are "objective" and the extent to which the economic policy could increase employment of these people (for instance, by developing apprenticeships and widening part-time job opportunities, providing more kindergartens or improving healthcare systems) is to compare the employment rates of various population groups to those in the other EU countries that could be regarded as peers in terms of labour market functioning. This will be discussed in the next subsection.

1.2 By population groups

An analysis of the aggregate indicators alone is not sufficient to assess the potential of the internal labour reserves. Even a spectacular performance in terms of aggregate employment or labour market participation might hide considerable underemployment in particular population groups. Therefore, we proceed with comparing the labour market performance of the Baltic countries with the EU peers in a breakdown by gender, age and education level.

Three broad population groups seem to be severely underemployed in the Baltic countries: upper-middle-aged men, people without a tertiary education degree and youth. Moreover, there is evidence of postponed labour market entry of young women (aged 20–24) in Lithuania and Latvia, while Estonia shows low employment of women in fertile age in the age group 25–44 with a tertiary education degree.

Unemployment rates are still high in Latvia and Lithuania, particularly among men (see Table 1). In terms of the inverse unemployment rate of men, Latvia ranked 24th, while Lithuania ranked 20th out of 28 EU countries in 2018. It seems that uppermiddle-aged men are especially suffering from unemployment. For instance, the unemployment rates of men aged 55–59 in Latvia and Lithuania are among the highest in the EU (the countries rank 25th and 26th respectively). Moreover, upper-middle-aged men in Estonia have a higher incidence of unemployment when compared to their counterparts in the rest of the EU or to other age groups, although to a somewhat smaller extent than in Latvia and Lithuania.

In addition to that, Latvia and Lithuania are characterised by low employment of people without a tertiary education degree. For instance, Latvia and Lithuania rank 16th and 20th respectively with regard to the employment rates of people with uppersecondary non-tertiary education (hereinafter referred to as 'secondary education') and the respective ranks with regard to the employment rates of people with primary and lower secondary education (hereinafter referred to as 'basic education') are even lower: 18th and 26th.

Table 1Baltic countries' ranks in terms of labour market performance(out of 28 EU countries; by population group; in 2018)

		Latvia		Estonia			Lithuania			
		Empl	Part	InvU	Empl	Part	InvU	Empl	Part	InvU
Total		10	5	21	2	2	13	7	8	17
Gender	Men	13	7	24	1	1	13	12	13	20
	Women	8	4	19	2	2	12	5	3	13
Education	ISCED 0-2	18	17	23	9	10	13	26	26	24
	ISCED 3-4	16	11	22	5	3	15	20	16	19
	ISCED 5-8	4	4	17	14	15	14	2	2	10
Age (years)	15–19	19	22	7	10	10	15	17	19	6
	20–24	11	11	16	4	3	10	13	15	13
	25–29	14	5	22	6	15	4	2	2	8
	30–34	11	6	21	12	18	9	5	5	10
	35–39	17	10	22	13	12	14	6	5	19
	40–44	12	5	20	9	10	12	19	12	24
	45–49	17	7	25	7	5	15	16	11	23
	50–54	14	11	25	6	3	19	10	9	18
	55–59	8	7	25	6	6	21	7	5	26
	60–64	8	7	23	4	4	12	5	3	21
	65–69	2	2	NA	1	1	NA	5	5	NA
	70–74	5	5	NA	1	1	NA	8	8	NA

Source: Author's calculations based on Eurostat data.

Notes. Empl – employment rate (the employed-to-working age population ratio); Part – participation rate (the employed and unemployed divided by the working age population); InvU – inverse unemployment rate (i.e. 100 – unemployment rate) measured in % of economically active population.

ISCED 0–2 reflects basic education, ISCED 3–4 – secondary education, while ISCED 5–8 reflects tertiary education.

The number represents the country's rank out of 28 EU countries. With regard to the employment rate, number "1" means that the respective country has the highest employment rate in the EU in a given population group, while number "28" designates the lowest employment rate. "NA" means data were not available.

Latvia and Lithuania show also low youth employment, ranking 19th and 17th respectively. It has to be noted that the low youth employment is not a consequence of high unemployment as both countries have relatively low youth unemployment rates. Rather, it reflects low labour market participation within the 15–19 age group, mirroring a combination of a high preference for attaining higher education and low incidence of apprenticeships.

It seems that apart from the transitory demographic dividend (see Subsection 1.1), the solid participation rates (and therefore also employment rates) in the Baltic countries are driven by very high economic activity of people above the statutory retirement age. For instance, the employment and participation rates in the age groups 65–69 and 70–74 years in Estonia are by far the highest in the EU; therefore, the country holds the high second place in terms of aggregate employment and participation rates, although the labour market performance of several other population groups is only moderate. It should also be mentioned that since unemployment is almost non-existent above the statutory retirement age (an individual either works or is considered

economically inactive when receiving an old-age pension), the high participation rates of seniors improve the relative position of the Baltic countries in terms of the aggregate unemployment rate (the given number of job seekers (in the age of 15–64) is divided by a bigger pool of economically active people)⁷.

It also seems that low employment rates of upper-middle-aged men and among people without a tertiary education are two interrelated observations. Employment of upper-middle aged men without a tertiary education degree in Lithuania and Latvia is one of the lowest in the EU. For instance, Latvia has the lowest employment rate in the EU for men with basic education within the age group 55–59, while Lithuania has the lowest rates for the age groups 45–49 and 50–54 (see Table 2).

Table 2

Baltic countries' ranks in terms of employment rate

		Latvia			Estonia			Lithuania		
	ISCED	0–2	3–4	5–8	0–2	3–4	5–8	0–2	3–4	5-8
Men	20–24	11	14	6	2	6	5	22	16	4
	25–29	6	16	8	4	5	2	14	9	3
	30–34	17	19	14	4	5	6	26	25	15
	35–39	19	19	14	8	11	6	27	27	15
	40–44	16	23	14	4	9	5	27	28	19
	45–49	24	25	11	7	21	25	28	27	23
	50–54	24	27	27	15	20	7	28	24	22
	55–59	28	22	11	23	21	18	26	20	8
	60–64	15	15	11	18	7	9	21	9	3
Women	20–24	10	11	9	7	10	3	22	16	2
	25–29	6	14	5	7	16	23	19	11	2
	30–34	12	16	12	4	23	23	20	17	1
	35–39	17	22	10	3	15	24	10	8	3
	40–44	17	13	9	5	12	21	19	14	1
	45–49	14	19	5	5	6	10	6	15	8
	50–54	16	17	8	1	14	9	8	16	10
	55–59	13	14	8	2	6	10	10	13	5
	60–64	6	10	4	2	2	3	20	12	2

(out of 28 EU countries; by detailed population groups; 2016–2018 average)

Source: Author's calculations based on Eurostat data.

Notes. ISCED 0-2 reflects basic education, ISCED 3-4 – secondary education, while ISCED 5-8 reflects tertiary education.

The three-year average indicator was chosen to minimize the statistical discrepancy, which is an inevitable consequence of presenting the relative employment rate in such a detailed breakdown.

No data for the period 2016–2018 on women with a basic education aged 25–29 and 50–59 were available for Lithuania; therefore, the rank was estimated using the data for the previous (latest available) years.

The age group 15–19 was not included in the Table since the majority of those people are still in the process of acquiring education and almost nobody has finished tertiary education.

⁷ The age group of 65–74 years is excluded from further analysis based on the following considerations. CSB Labour Force Survey defines an employed person as an individual who has worked at least one hour during the reference week, and the definition includes unpaid family workers. In fact, many seniors (even those who are employees) are working part-time and often accept rather low compensation as an addition to their generally low old age pension. For them, continuation of work is definitely a necessity-driven rather than opportunity-driven choice.

Underemployment of upper-middle-aged men, however, is not limited only to those with a low education level. For example, Latvia ranks 27th in terms of the employment rate of 50–54 years old men with a tertiary education degree (while Lithuania ranks 23rd in the age group 45–49 years). It might be that a tertiary education degree is not an insurance policy against outdated work skills. A university diploma does not mean that an individual can rest on his/her laurels, without acquiring, for instance, further digital skills or learning foreign languages. Another reason might be deteriorating health condition (both potential reasons will be addressed in Section 3).

Additionally, Estonia has a relatively low employment rate of women with a tertiary education degree in fertile age in the age group 25–44. This might reflect a somewhat higher birth rate in Estonia than in the two other Baltic countries in combination with more generous maternity leave benefits or lower availability of kindergartens. Nevertheless, this is an important observation since Lithuania, on the contrary, reports one of the EU's highest employment rates with regard to women in fertile age holding a tertiary education degree.

Given the significant regional differences in employment patterns across various EU countries, to quantify labour reserves in the Baltics, it would be more relevant to compare its labour market indicators only with those of the EU countries that could be defined as peers in terms of labour market performance. Seven EU countries were selected as such peers: Germany, Austria, Denmark, the Netherlands, Sweden, Czechia and the UK (hereinafter referred to as 'EU7'). All these countries have relatively high aggregate employment and participation rates which are currently broadly at par with the Baltic countries (see Chart A2). And neither of these countries currently has substantial output or unemployment gaps (either positive or negative), suggesting that their labour market performance mainly reflects fundamentals (like efficiency of matching between the unemployed and vacancies) rather than a transitory impact of the economic cycle. Therefore, a consistent difference in the labour market performance of a given population group between the Baltic countries and the EU7 might point to potential labour reserves in the respective population group.

Over the last 15 years, the aggregate employment rate in the Baltic countries has consistently been lower than in the EU7. In Latvia and Lithuania, the aggregate employment rate still lags more than 3 pp behind that of the EU7 (see Chart 12). Although the employment rate of women is currently broadly at par with the EU7, the employment rate of men in Latvia and Lithuania is about 6 pp lower that of the EU7 owing to both lower participation and higher unemployment. Moreover, men's employment is more elastic to the economic cycle and posted a steeper drop during the 2009–2010 crisis. This reflects higher men's employment in construction and manufacturing, the sectors that were substantially hit by the crisis; at the same time, many women work in the public sector (particularly, in education and healthcare) having less layoffs during economic downturns.

Chart 12 **Employment rate difference from the EU7 decomposition by gender** (pp; contributions; aged 15–64)



Source: Author's calculations based on Eurostat data.

Although the employment of people with a tertiary education degree in Latvia and Lithuania is broadly at par and even slightly exceeds the EU7, people with basic and

secondary education are employed considerably less. For example, the employment rate of people with basic education and those with secondary education in Latvia is 14 pp and 6 pp lower than in the EU7 (27 pp and 8 pp lower in Lithuania respectively; see Chart A7). In the basic education group, low relative employment mainly reflects low relative participation in the labour market, while in the secondary education group it reflects both low participation and high unemployment. The picture is broadly similar across genders: the employment of both men and women without a tertiary education degree in Latvia and Lithuania lags behind the respective figure of the EU7 considerably⁸.

Comparison of employment rates by age group with the respective figures of the EU7 supports the view that youth and upper-middle-aged men in the Baltics are severely underemployed, particularly in Latvia and Lithuania. For instance, the employment rate of 15–19 years olds in Latvia and Lithuania is 25 pp lower (in Estonia, 20 pp lower) than in the EU7, mainly reflecting their very low participation in the labour market (see Chart A8). Moreover, young people show very low relative employment irrespective of the economic cyclical conditions. Therefore, it most probably reflects fundamental reasons like low prevalence of apprenticeships in the Baltics or strict regulations hampering youth employment⁹ rather than low labour demand.

Relatively low employment of youth in Latvia and Lithuania is evident also in the age group 20–24, particularly for women. In comparison with the EU7, the employment rates of women in the age of 20–24 in Latvia and Lithuania are respectively 8 pp and 11 pp lower (see Chart A9). In both countries the low employment of young women mainly reflects poor participation in the labour market, while unemployment is only marginally higher than in the EU7. Few women have own children at this age. Rather low employment most likely reflects postponed entry into the labour market. In Lithuania, this is also characteristic of young men, yet to a somewhat smaller extent as compared to young women. In the three subsequent age groups (25–29, 30–34 and 35–39) significantly lower employment of women in Latvia and Lithuania is no longer observed¹⁰.

The first signs of low employment of men are actually evident already well before the upper-middle-age. For example, the employment rate of men in the age group 40–44 in Latvia and Lithuania is respectively 4 pp and 9 pp lower compared to their counterparts in the EU7, mainly on the account of higher unemployment (see Chart A10). In the age group 45–49, this gap grows to 9 pp in both countries (see Chart A11). The contribution of low participation to low employment tends to grow with age (see Charts A12–A14). It is obvious that the employment of men without a tertiary education degree in the Baltics falls rapidly at the age of 55–59 years, which is earlier than in the EU7 (see Chart 13). In Latvia, the employment rate of men in the age 45–59 is 15–25 pp lower than the respective rate in the EU7 if having basic education and 10–15 pp lower if having secondary education (see Chart 14). Figures

⁸ Results are available upon request.

⁹ For instance, the Chairman of the Farmer's Parliament representing agricultural firms in Latvia assessed that the current regulations do not promote youth participation in the labour market. Although tractor-type machinery driving licenses can be obtained at the age of 16, the current regulations prohibit hiring underage persons as machine operators as well as do not allow them to work full time even during the summer holidays despite the very high labour demand in agriculture during this season (LA.LV (2019)).

¹⁰ Results are available upon request.

for Lithuania are broadly similar, while the underemployment of upper-middle-aged men in Estonia is less pronounced.

Chart 13

Employment rates by gender, age group and level of formal education in the Baltic countries and the EU7 (%; 2016–2018 average)



Source: Eurostat data.

Note. The three-year average indicator was chosen to minimize the statistical discrepancy which is an inevitable consequence of presenting the employment rate in such a detailed breakdown.

We proceed with quantification of the internal labour reserves in the Baltic countries, taking into account those population groups that were consistently underemployed compared to the EU7 over the years. Mainly, these are upper-middle-aged men and youth. By raising the employment rate to the level of the EU7 in these population groups, Estonia could increase employment by more than 25 thousand people, which corresponds to 4% of total employment. At the same time, Latvia could increase employment by over 55 thousand people (more than 6% of total employment) and Lithuania by more than 85 thousand people (almost 7% of total employment; see Table 3).

Managing to increase the employment rates in each population group up to the current levels of the EU7 does not necessarily mean that the internal labour reserves in the Baltic countries would be fully exhausted. Movement towards the EU7 employment rates is similar to the income convergence concept in a sense that the target is a dynamic one, rather than static. Employment rates in the EU7 countries tend to increase over time. For instance, currently nearly two thirds of 60–64 years old men are employed in the EU7 countries, compared to approximately one third at the beginning of the century (see Chart A15). Likewise, currently nearly half of women aged 60–64 years are employed in the EU7, compared to about 20% two decades ago. The EU7 employment rates tend to increase in several other age groups, too. Consequently, the lagging behind the EU7 in terms of the employment rates in some population groups indicates the current amount of labour reserves; in the future, additional labour reserves might be discovered¹¹, for instance, due to a global improvement in the work skills and health condition of seniors.

Chart 14

Differences between employment rates in the Baltic countries and the EU7 by gender, age group and level of formal education

(%; 2016–2018 average) Basic education (ISCED 0-2) Secondary education (ISCED 3-4) **Tertiary education (ISCED 5-8)** Men 5 15 15 10 10 5 0 0 -5 5 -5 -10-15-20-10 -25 -5 -30 -35 -15 -1020-24 20-24 55-59 60-64 45-49 50-54 55-59 50-64 25-29 45-49 29 30-34 35-39 40-44 45-49 50-54 20 - 2425-29 30-34 35-39 40 44 30-34 35-39 40-44 Women 15 12 10 10 5 8 10 6 0 4 5 -5 2 0 -100 -15 -6-20 $-8 \\ -10$ -25 -10 60-64 20 - 2425-29 30-34 35-39 50-54 55-59 60--64 20-24 25-29 30-34 35-39 40-44 45-49 50-54 55-59 20-24 25-29 30 - 3450-64 4 40-44 50 - 54Estonia Latvia Lithuania

Source: Author's calculations based on Eurostat data. Note. For Lithuania, data on women with basic education aged 20–34 and 50–64 were unavailable.

¹¹ Similarly to, for instance, the global oil reserves are increasing over time due to the discovery of new oil fields.

Table 3 **Internal labour reserves in the Baltic countries by age group and gender** (thousands of people; in 2018)

Age group	Lat	via	Este	onia	Lithuania		
	Men	Women	Men	Women	Men	Women	
15–19	11.3	11.1	6.3	5.0	17.1	17.8	
20–24	0.6	3.4			8.1	9.1	
25–29	1.9	0.1		2.4			
30–34	1.8			2.6	1.1		
35–39	1.2	1.7		1.2	2.1		
40-44	2.3			0.5	7.6		
45-49	5.5		1.5		9.0		
50-54	6.0		1.3		7.0		
55–59	5.2		4.4		7.4		
60–64	3.8		1.7				
Total	55	5.9	26	5.9	86.3		

Source: Author's calculations based on Eurostat data.

Notes. Labour reserves are defined only for those population groups where the employment rate is below the EU7. Labour reserves reflect additional employment that would be observed if the employment rates reached the level of the EU7.

2. ANATOMY OF EXTERNAL LABOUR RESERVES

The labour reserves in the Baltic countries are not limited only to the internal ones. The Baltics have experienced two emigration waves since the beginning of the century and currently its diasporas in other EU countries total more than a half million people. Survey results suggest that only some part of emigrants wish to return home at some point in the future¹². However, given the substantial stock of emigrants, realisation of even modest return migration scenarios could have a substantial impact on the Baltic labour markets. Moreover, willingness to return home might depend on many economic and political factors that could change over time (like gradual narrowing of the wage and unemployment gaps between the Baltics and the prosperous EU countries¹³ or Brexit). What makes return migrants different from the non-EU immigrants is a rather high level of skills and a positive community attitude towards them. While the attitude towards immigration is negative in a large part of the society in the Baltic countries (Migrant Integration Policy Index (2015)), remigration is mostly considered as a positive outcome because of a common language and cultural origin of remigrants; moreover, remigration sometimes means renewal of social ties and families.

The first emigration wave of this century from the Baltic countries took place around the time of the EU accession in 2004 and was mainly caused by the big wage differentials between the Baltic countries and wealthier EU countries. The second emigration wave occurred just after the onset of the economic crisis of 2009–2010 and mainly mirrored growing unemployment differentials with the rest of the EU

 $^{^{12}}$ For instance, Hazans (2016) reports that 16% of Latvian emigrants answered that they will or probably will return to Latvia within five years (of which 4% – within six months), and another 16% think they could return upon retirement.

¹³ At the time of the EU accession, the average wage in the Baltics was only 25%–40% of the minimum wage in the UK; 15 years later, the average wage increased to 65%–90% and continues rising (see Chart A16).

(see Chart A16). Note that application of different emigration proxies could yield a different picture as to when exactly the emigration took place (see Chart A17).¹⁴

The main destination country for Lithuanian and Latvian citizens was the UK, followed by Ireland, Germany and recently also Norway. In 2017, Norway became the second most popular migration destination for Lithuanian citizens; moreover, emigration also grows to Denmark, the Netherlands and Sweden (for Latvia such detailed data are unavailable, but anecdotal evidence suggests that the migration destination countries are similar to those of Lithuania). Conversely, more than a half of Estonian emigrants go to Finland. Moreover, close geographical (as well as linguistic and cultural) proximity to Finland allows many Estonians to work in this country without changing the declared place of residence; thus, the official migration statistics reflecting the long-term emigration are likely to underestimate the actual flow of labour from Estonia to Finland.

In 2018, the stock of Baltic nationals living in other EU or European Free Trade Association countries was more than 300 thousand people for Lithuania, more than 160 thousand people for Latvia and about 75 thousand for Estonia (excluding children and seniors). These numbers correspond to 8%–13% of the adult population of the Baltic countries, which is a relatively high number by EU standards. The vast majority of them has emigrated since the beginning of the century.

These substantial emigration flows could be easily predicted already before the EU accession. At the time of the EU accession, the Baltic countries severely lagged behind Western Europe in terms of physical capital per worker (reflected in low labour productivity and wages); afterwards, this difference decreased markedly (see Chart A18) due to both physical capital inflows (investment, including EU funds) and labour outflows (which would have been even bigger in the absence of investment inflows). Both capital inflows and labour outflows had a positive effect on the average income level (GDP per capita) in the Baltics, supporting income convergence with the rest of the EU and implying that at least economically neither emigrants nor stayers (on average) are worse off¹⁵ (Dāvidsons (2015)).

Nevertheless, emigration has not lowered the average education level, at least not measured by the years of schooling. The average education level of the adult population in the Baltics exceeds that in many other EU countries (see Chart 17). In fact, the emigration intensity among basic education programme graduates was considerably

¹⁴ Statistical recording of emigration was imprecise, giving rise to a public debate on how many people actually left the country and when exactly they left it (for instance, Krasnopjorovs (2011)). Emigration recording by the statistical agencies improved significantly since then. However, official statistics document only long-term migration (i.e. longer than a year); the failure to record short-term job seeking spells abroad gives rise to a discrepancy between official migration estimates and alternative migration proxies such as the difference between passenger departures and passenger arrivals in the main airports or new social security numbers issued in Ireland or the UK.

¹⁵ One might argue that lower population density makes it harder to maintain infrastructure in rural areas. However, the quality of infrastructure mainly depends on the density of economic activity (GDP per km²) rather than population density. There are several countries with low population density and better infrastructure (e.g. Finland) and many countries with high population density and worse infrastructure (many of them are located in Africa and Asia). The present level (similar to the United States) of population density in the Baltic countries is unlikely to be an unconquerable barrier to economic development. However, it is true that growing population flows between countries (and even between municipalities within a country) require policy responses which might include changing the networks of roads, schools and hospitals.

higher than among people with a tertiary education degree (see Chart 15)¹⁶. This could reflect two facts. First, the Baltic countries exhibit relatively large unemployment gaps between education levels: over years, people with low education were consistently less likely to find a job than people with an advanced education degree. Second, low-skilled jobs were particularly vulnerable during the recent economic crisis, intensifying emigration of low-skilled labour. The latter observation reflects both the fact that the exposure to the economic crisis was uneven across sectors and labour hoarding of high-skilled workers. It is also worth mentioning that several other countries that accessed the EU after 2004 experienced both larger emigration and more sizeable share of low-skilled employees in the structure of emigrants (like Poland, Bulgaria and Romania; see Chart 15).

Chart 15

Share of people living in another EU country and brain drain index





Source: Author's calculations based on Eurostat data. Notes. The brain drain index reflects the average difference in the education level of emigrants and stayers. A positive value indicates that the average education level of people born in the respective country and living in another EU country exceeds the average education level in the country of origin (both people groups refer to the age 20–64). Three education levels have been defined based on the available data: basic education (ISCED 0–2), secondary education (ISCED 3–4) and tertiary education (ISCED 5–8).

Although returning migrants have accounted for the bulk of immigration so far (particularly, in Latvia; see Chart A19), tightening labour markets and a slight liberalisation of immigration regulations have also led to an increase of immigration from non-EU countries. Several non-EU countries with generally low wage level are located near the Baltic countries, including Ukraine, Russia and Belarus; and might be also considered as potential external sources of labour reserves. In fact, the average wage in many regions of Ukraine, Russia and Belarus neighbouring with the Baltic countries is below the minimum wage in the Baltics (see Chart 16). The ratio of the average wage in the migration source country to the minimum wage in the destination country for Ukraine and the Baltics is currently only slightly higher than the respective ratio between the Baltics and the UK 15 years ago when such wage disparities led to the first massive emigration wave in the modern history of the Baltic countries.

¹⁶ For a detailed survey of who, when and why left Latvia see Hazans (2019).



Chart 16 Average monthly gross wage in selected non-EU countries and in their regions (euro)

Source: Author's calculations; data from the statistical offices of the respective countries. Notes. The average wage in euro terms was assessed using the following exchange rates: 1 EUR = 70 RUB = 30 UAH = 2.2 BYN = 370 KZT = 20.5 MDL = 550 AMD = 2.7 GEL. Estonia, Latvia, Lithuania: data refer to the year 2018 (Ukraine, Kazakhstan: 2017 data; other countries: 2016 data). The colours in the lower Chart denote the following: yellow – Ukraine, green – Belarus, orange – central and north-east regions of Russia.

Some of the emigrants from the neighbouring non-EU countries might choose the Baltic countries rather than wealthier EU countries, owing to their close proximity or smaller cultural and linguistic differences. Immigration flows from Ukraine and the CIS countries to the Baltics are already on a rise, reflecting continuous tightening of the Baltic labour markets and rather weak recent economic development in the source countries. For instance, in 2018, about 4 000 people immigrated to Latvia from Ukraine and the CIS, which is comparable with the number of remigrants¹⁷.

Only a broad picture could be derived from comparing the wages in the Baltics to the wages in the non-EU countries, since this exercise has several

¹⁷ As this number does not include short-term immigrants, the actual labour flows are likely to be larger.

drawbacks¹⁸. Nevertheless, it is clear that the wage differences are so large that the immigration flows from the non-EU countries would be considerably higher if not restricted by the EU border and the Baltic legislation. Therefore, a gradual easing of immigration rules in times of a cyclical expansion and their tightening during the times of economic slowdown might appear to be a valid instrument in the hands of policy makers in the Baltic countries to fine-tune the labour supply to demand, particularly when the required adjustment is significant and should yield quick results (activation of both internal labour reserves and remigrants is likely to take more time)¹⁹.

3. POLICY DIRECTIONS TO ACTIVATE LABOUR RESERVES

This chapter discusses four main policy directions to activate internal labour reserves: education, healthcare, labour market regulations as well as a particular focus on people living in regions with low economic activity and national minorities²⁰.

3.1 Education and skills

Although all three Baltic countries are characterised by decent quantitative indicators of education, the quality of education differs. Latvia and Lithuania show rather modest results with regard to the quality of education by EU standards. In Estonia, the education quality indicators are better in all dimensions, yet some of them still lag behind the EU7. Better education quality in Estonia could be one of the factors helping this country to maintain a lower natural rate of unemployment than in Latvia and Lithuania over the years. Also, larger incidence of lifelong learning and better digital skills of adult population are likely to be among the factors why the underemployment of upper-middle-aged men in Estonia is not as striking as in Lithuania and Latvia.

All three Baltic countries are characterised by a relatively high level of formal education. Mean years of schooling for adults are broadly at par with the EU7 (see Chart A20). Almost 40% of population in the age group 20–64 have a tertiary education degree, which is one of the highest values in the EU (see Chart 17). It is noteworthy that the recent emigration has not decreased the average education level of population; in fact, emigrants were, on average, slightly less educated than stayers (see Section 2). People with a tertiary education degree typically have higher participation and employment

¹⁸ First, the definition of average wage can differ across countries (for instance, a wage is sometimes defined per employee, while sometimes per full-time employment). Second, the comparison of gross official wages disregards the amount of envelope wages and taxes on labour income. Third, the relative positions of countries in terms of average wage in euro might change from year to year in cases of considerable exchange rate fluctuations.
¹⁹ This paper focuses on identifying the sources of internal and external labour reserves. Questions like whether immigration regulations should be eased, when, how and for which occupations are outside the scope of this paper. Note, however, that only high-skilled immigrants are likely to contribute to an increase in GDP per capita, thereby fostering the Baltic countries' income convergence with the rest of the EU. At the same time, according to the neoclassical growth model, low-skilled immigration has a negative impact on GDP per capita and, thus, on the average living standards in a country. An additional observation speaking against immigration of low-skilled labour is the substantial underemployment of people without a tertiary education degree in the Baltics as compared to the EU7.

²⁰ This rather narrow setup implies several research limitations. First, policies aimed at activating external labour reserves are left outside the scope of this paper. These include, inter alia, ensuring sustainable economic growth (which would further decrease the wage and unemployment gaps between the Baltics and wealthier EU countries) and maintaining the links with diasporas. Second, the labour shortage pressures can be eased by labour reallocation across sectors (i.e. from sectors with low productivity to sectors with high productivity). However, the debate about the optimal extent of policy makers' intervention into the structure of the economy as well as the optimal tools of such intervention goes far beyond the labour market issues and therefore also left outside the scope of this paper.

rates as well as lower unemployment rates than people with basic or secondary education, and the Baltic countries are no exceptions (see Charts A21 and A22). In fact, the Baltic countries show wider labour market performance gaps depending on education level than several other EU countries (see Charts 18 and A23)²¹.

Chart 17



(%; aged 20–64; in 2018)



Source: Author's calculations based on Eurostat data. Note. Index value represents the average education level of population: value is positive if the number of people with tertiary education exceeds that with basic education and negative otherwise.

The situation with the quality of education, however, is different. Latvia and Lithuania lag significantly behind the EU7 in all available indicators of education quality. At the same time, the performance of Estonia is uneven: it ranks either slightly above or below the EU7 depending on the selected measure.

While Estonian students consistently achieve one of the highest PISA scores among the EU countries, their counterparts in Latvia and Lithuania show only modest results; and this difference is obvious in all three PISA subjects: science, reading and mathematics (see Chart A24). All three Baltic countries are among the EU leaders in terms of education spending as a share of the general government budget. Yet the school system is the most consolidated in Estonia where the number of teachers and schools relative to the number of students is the lowest in the Baltics and the teachers' wages are consequently significantly higher. Latvia, on the contrary, maintains a wide network of small schools which are unable to afford neither adequate wages for their teachers, nor good education standards for their students. School size and teachers' wages are the two variables most closely associated with the educational performance

²¹ This does not necessarily mean that tertiary education meets the labour market demand. Rather, it is a result of an interaction between labour demand and supply. Moreover, people are likely to choose education paths in accordance with their otherwise unobserved characteristics. That is why relatively low unemployment of people with a tertiary education degree does not necessarily mean that unemployment is low because of completing tertiary education.

of school students in Latvia (Krasnopjorovs (2019)). Thus, it seems that a more consolidated school network in Latvia and Lithuania would improve the quality of general secondary education in these countries.

Chart 18





Source: Author's calculations based on Eurostat data.

GCI data confirm that science and math education in Estonia outperforms both other Baltic countries and the EU7. Teaching in Estonia also encourages more creative and critical individual thinking and is less focused on memorising than in Latvia and Lithuania, which is broadly at par with the EU7.

Although the quality of management schools in Estonia also tends to be higher than in the other Baltic countries, it still lags behind the EU7 (see Charts 19 and A25). These results are further supported by university ranking platforms. For instance, according to the QS World University Rankings, several Estonian universities are placed considerably higher than their counterparts in Latvia and Lithuania, but still behind some regional universities in the Scandinavian countries like Finland (see Table A1). Estonian scientists also produce more scientific articles (and these articles are cited more often) than the scientists of other Baltic countries, which is likely to reflect both more substantial science financing and higher system efficiency (Krasnopjorovs (2018)). As a result, employers regard Estonian graduates as possessing skills that are more in line with the labour market needs in comparison with those of the graduates in Latvia and Lithuania.

This, however, has not translated into an ample supply of skilled employees for Estonian businesses. The necessity to compete with employers from wealthier EU countries determines the fact that the availability of skilled employees is currently rather limited in all three Baltic countries. The difference lies in the fact that Estonians enjoy higher incomes and lower incidence of unemployment than their counterparts in Latvia and Lithuania (Estonia has both lower NAIRU and smaller employment gap vis-à-vis the EU7).

Chart 19 Qualitative and quantitative indicators of education in the Baltics

(difference with the EU7; points)





Extent of staff training and the ease

Skillset of graduates (GCI)





Critical thinking in teaching and digital skills (GCI)



of finding skilled employees (GCI) 0.0 -0.5 -1.0 -1.5 Extent of staff Ease of finding skilled employees

Source: Author's calculations based on OECD (PISA 2015) and Global Competitiveness Report (2017, 2018) data.

Moreover, Estonia significantly outperforms both other Baltic countries in terms of digital skills. The conclusion that the digital skills of Estonians already exceed those of the EU7 or still lag somewhat behind depends on the data source. GCI data based on a survey of employers and experts reveal that the Estonian economically active population possesses slightly better digital skills than the EU7 countries on average. At the same time, Eurostat data that is based on a direct measurement of digital skills show that Estonia is still somewhat lagging behind the EU7 (see Charts 20 and A26). Although adolescents possess rather good digital skills in all Baltic countries, these skills decline rapidly with age, particularly in Latvia. Regarding the digital skills of upper-middle-aged population, all three Baltic countries significantly lag behind the EU7, particularly Latvia and Lithuania. For instance, compared to the EU7 average, the share of 45–54 years old individuals with at least basic digital skills is 15 pp, 28 pp and 29 pp lower in Estonia, Lithuania and Latvia respectively. Thus, inadequate digital skills might be one of the reasons of the low employment rates of upper-middle-aged men particularly in Latvia.

Chart 20 **Baltic countries vs EU7: digital skills and lifelong learning** (difference; pp)





Share of individuals participated in education during the last four weeks (%)



Source: Author's calculations based on Eurostat data.

Moreover, the incidence of lifelong learning in Estonia is significantly higher than in Latvia and Lithuania as well as slightly higher than in the EU7. Every fifth individual in the age of 25–64 in Estonia participated in education or training programmes during the last four weeks, compared to every 6th individual in the EU7 and every 16th individual in Latvia and Lithuania. Latvia and Lithuania lag behind both Estonia and the EU7 in all population groups and the gaps between genders are broadly similar. For instance, only 3% men aged 45–54 years in Latvia and Lithuania reported they participated in education or training programmes during the last four weeks, while in Estonia and the EU7 the respective figure was 12%. Not surprisingly, underemployment of upper-middle-aged men in Lithuania and Latvia is considerably higher than in Estonia.

All three Baltic countries significantly lag behind the EU7 in terms of active labour market policy spending. Particularly, Latvia has the lowest ratio of active labour market policy spending to GDP in the EU (0.2% of GDP as compared to 0.3% in Estonia and Lithuania, and 0.8% in the EU7; see Chart A27). Not only the total amount of labour market policy spending is relatively low in the Baltics, but Latvia also significantly lags behind in terms of the share of active spending in total spending (1/3 in Latvia as compared to 1/2 in the EU7).

Employment agencies typically work with individuals having obtained a status of unemployed. This group might not fully correspond to job seekers (people who are really looking for a job) even if we disregard hidden unemployed (available for work but not looking for it) and other underemployed (currently unavailable for work due to, for instance, childcare or health problems, but could be activated by targeted public policies, for example, aimed at reducing kindergarten waiting lists or implementing a healthcare system reform). Like in a hospital where the patients with the most serious problems are also the most silent ones, it may also be that the jobless who will never return to the labour market without activation policies will never get registered as unemployed with the employment service. Without broadening the scope of employment agencies towards addressing the needs of all underemployed people irrespective of whether an individual has officially registered as unemployed or not, it may be impossible to fully access the available internal labour resources. The Baltic countries may lack the financial resources to do this.

3.2 Health

Another factor most likely to impede employment of upper-middle-aged men is their rapidly deteriorating health condition²². Estonian men show both somewhat better health condition and longer healthy life expectancy than their peers in Latvia and Lithuania, which is likely to be one of the reasons why underemployment of upper-middle-aged men in Estonia is not as striking as in the other Baltic countries.

Although men's life expectancy is lower than that of women in all EU countries, the difference is particularly large in the Baltics. For instance, healthy life expectancy for 50-year-old men in the Baltic countries is only 11–14 years, which is one of the lowest in the EU and substantially lags behind the EU7. The self-assessed health status of the upper-middle-aged men is also relatively low in the Baltics by EU standards with a large share of people assessing their health as bad or very bad, particularly in Latvia and Lithuania (see Charts 21 and A28).

Chart 21 Baltic countries vs the EU7: life expectancy and self-perceived health condition



Self-perceived health status (points; in 2017). Scale runs from –200 (very bad) until 200 (very good).



Source: Author's calculations based on Eurostat data.

The health condition depends on a wide variety of factors, and some of them are outside the direct control of policy makers. For instance, one of such factors favourable to the Mediterranean countries is climate. However, it does not mean that the Nordic EU countries are destined to a shorter healthy life and worse health condition. In fact, life

 $^{^{22}}$ The causality seems to be bilateral in this case. On the one hand, the non-working population has lower incomes and it might be subject to a lower self-esteem and greater risk of alcohol dependency – a combination of factors that might worsen the health condition. On the other hand, an inadequate health condition is an obstacle to employment. In any case, however, a first step towards breaking this vicious circle is the improvement of health condition.

expectancy in northern countries like Sweden, Norway, Canada or Iceland is similar to that enjoyed in the Mediterranean countries, and men's healthy life expectancy at birth is about 10 years longer than in the Baltics. The fact that several countries located a few hundred kilometres to the north enjoy considerably better health outcomes suggests that there is a large room for improving the population's health condition also in the Baltics.

Inadequate health outcomes are most likely the result of both low healthcare spending and low efficiency of the healthcare system. Latvia and Lithuania, in particular, have managed to maintain a relatively large number of hospital beds, doctors and medical equipment (e.g. magnetic resonance units) at low costs, mainly reflecting low wages in the healthcare sector. However, decent levels of these intermediate outputs did not easily translate into the outcomes such as healthy life expectancy, reflecting the low efficiency of the healthcare system. For instance, Rutkaste (2016) describes the Latvian healthcare system as non-transparent, inaccessible and inefficient. The large share of private out-of-pocket spending further decreases the accessibility of healthcare, particularly by the low-income households²³.

In addition, the population's health condition in the Baltic countries is likely to be impeded by unhealthy lifestyles, particularly by the relatively high consumption of tobacco and alcohol²⁴ as well as low physical activity. For instance, the share of daily and occasional smokers among young and middle-aged men in the Baltics considerably exceeds the respective indicator in the EU7, i.e. by about 10 pp in Estonia, 15 pp in Lithuania and 20 pp in Latvia. Furthermore, men in the Baltics exercise considerably less than in the EU7 irrespective of the income quintile they belong to (see Chart A29).

There is a naïve view that labour market participation and employment might be boosted by raising the retirement age only. However, as poor health condition (and outdated skills) tend to impede employment well before the statutory retirement age, an increase in retirement age should be combined with special programmes aimed at improving work skills and the health condition of the upper-middle-aged population.

One could argue that the problem of low employment of upper-middle-aged men might resolve itself on account of generation renewal²⁵. However, it is unlikely to be the case. Differences in the health condition of the Baltic and EU7 population actually emerge much earlier than at the upper-middle-age. In fact, adolescents in the Baltics are already significantly less healthy than their peers in the EU7 (see Chart A30). This suggests that without a substantial improvement in health quality standards, underemployment of upper-middle-aged men (and the resulting loss of GDP and wellbeing) is likely to persist.

3.3 Labour market regulation

Government regulation of the labour market contains several dimensions that are or are not favourable to achieving high employment levels and thus to activation of

²³ For details, see Latvijas Banka (2016).

²⁴ Although data on alcohol consumption in the Baltics might be somewhat inflated by purchases made by Scandinavian tourists.

²⁵ One could also mistakenly consider investment in education and health of pre-retirement age people as merely social policy and conclude that this investment is not worth it. However, this is also an input in economic terms, contributing directly to the increase in GDP, the standard of living, tax revenues and decreasing social expenses.

labour reserves. These include labour market flexibility, taxation of labour income and the minimum wage.

There is sometimes a naïve opinion that the stricter the employee protection legislation, the more beneficial it is for employees. However, it might not be the case. For instance, regulations which make it harder to lay off workers or decrease wages also hinder both new hires and wage increases. Moreover, rigid labour markets tend to be less effective and may exhibit a higher natural unemployment rate. That is why several EU countries have implemented complex structural reforms in order to liberalise their labour markets (Fadejeva (2019)).

Labour market de facto flexibility in the Baltic countries is a well-known fact. For instance, in Latvia firms found it rather easy to decrease wages and dismiss permanent employees during the recent economic crisis (Fadejeva and Krasnopjorovs (2015)). The trade union density and collective bargaining coverage remain very low in the Baltics, with wages being set mainly at an individual level. GCI also traditionally places all three Baltic countries among the economies with the most flexible wages (see Chart 22). Proven ability of the labour market to absorb macroeconomic shocks means that labour market elasticity in the Baltics is sufficient not to be among the main factors underlying the still relatively high structural unemployment.

However, in the case of Latvia there is a marked difference between labour market elasticity de facto and de jure. Latvian legislation in the area of employment relationships is one of the strictest in the OECD. For instance, according to the law, protection of permanent workers in Latvia is as strict as in Belgium and Italy. Nevertheless, several rules that formally could be evaluated as strict either cannot be enforced or can be easily evaded²⁶ (see also Eamets (2013) for the case of Estonia).

The difference between the significant stringency de jure and flexibility de facto is also related to the large share of shadow economy as well as heavy, long and expensive legal procedures, which can motivate employees to decide to quit job "voluntarily" without exercising the strict labour market regulation for their own benefit.

However, even if not executed, strict labour market regulations might distort the labour market. For instance, labour market regulations are one of the factors evaluated by investors when deciding in which country to open a subsidiary. Strict regulations may deter investors, particularly if they do not know that a considerable part of OECD employment protection index components is regulated only on paper. Moreover, labour shortage can complicate law evasion, thus increasing labour market distortion.

The bigger the difference between labour costs and net wages, the larger structural unemployment and the shadow economy. Employee reservation wage, after adding labour taxes, often exceeds the market value of work done; or the net wage after subtracting the tax wedge from labour costs, which are at par with productivity, appears to be so low that it is hard to find suitable employees. The result is similar

²⁶ For instance, Section 110 of the Latvian Labour Law prohibits dismissal of a trade union member without the consent of the respective trade union (if the trade union does not agree, it is only a court that can dismiss an employee). Although this rule seems to be very strict, it does not apply to six out of seven employees who are not trade union members (trade union density is close to zero in the private sector). In turn, Section 112 of the Latvian Labour Law prescribes rather generous severance pay (up to four monthly salaries if job tenure exceeds 20 years). In practice, however, dismissal could be executed either as "voluntary" or as an outcome of non-compliance with work procedures.
in both cases, i.e. either the job remains unfilled or the employer agrees with the employee that the wage will be partly paid in an envelope.

Chart 22

Labour market flexibility indicators

Flexibility of wage determination



Protection against dismissals (2013–2015 average; OECD)



Source: Author's calculations based on GCI 2018 and OECD data.

The tax wedge on labour income in Latvia and Lithuania is considerably higher than in Estonia irrespective of household composition (see Chart A31). For instance, the tax wedge on low-income earners without children in Latvia is still substantially higher than that in Estonia and Lithuania, although the Latvian tax reform of 2018 has decreased it slightly below the EU average.

Although the tax rates on labour income in Latvia and Lithuania are somewhat lower than in the EU7, the GCI survey data reveal that labour taxation tends to reduce work incentives to a greater extent than in the EU7. It suggests that neither crude nor effective tax rates can be compared directly between countries when assessing to what extent taxation distorts the labour market. Perhaps public perception of the efficiency of government expenditure is one of the indicators determining the extent to which a given tax wedge is perceived as distortive. Estonia has somewhat smaller labour tax rates and significantly higher perception of the efficiency of government expenditure (at least as revealed by the GCI data). Consequently, labour taxes in Estonia are less distortive to the labour market than those in Latvia and Lithuania (see Chart A32). This aligns well with the observation that Estonia, over the years, has had a higher employment rate and lower natural rate of unemployment than the other Baltic countries.

The minimum wage is another important labour market regulation indicator. Employers tend to react to minimum wage increases, inter alia, by dismissing employees, postponing recruitment of new employees and raising prices (Fadejeva and Krasnopjorovs (2015)). Thus, too high minimum wages could increase the natural rate of unemployment, hidden unemployment or the spread of the shadow economy.

In the Baltics, the current minimum-to-average wage ratio (somewhat above 40%;

see Chart 23) is broadly at par with the EU average. However, over the years Estonia has consistently had the lowest minimum-to-average wage ratio in the Baltics, which is likely to be also the least distortive. Note also that the minimum-to-average wage ratios in Estonia and Latvia were among the lowest ones in the EU a decade ago. Since then, the minimum wage in the above countries has grown faster than both the average wage and labour productivity. The minimum-to-average wage ratio increased also in Lithuania, albeit from a somewhat higher starting point.

Chart 23 Minimum-to-average wage ratio (%)









Source: Author's calculations based on data from the CSB, Statistics Estonia, Statistics Lithuania and Eurostat.

Even if the aggregate minimum-to-average wage ratio is acceptable by European standards, minimum wages could still distort the labour market in the sectors and regions with the lowest wages. For instance, in Latgale (eastern Latvia) the minimum-to-average wage ratio exceeds 60%, which is a very high number by international standards. Latgale has also historically had a very high unemployment rate.

Some Latvian politicians call for further considerable minimum wage rises, arguing that currently the minimum wage in Latvia is significantly lower than that in Estonia and Lithuania (see Chart A33). However, this argumentation might be misleading. The average wage in Estonia is also significantly higher. Therefore, the minimum-to-average wage ratio in Latvia currently exceeds that of Estonia. In the case of Lithuania, the steep minimum wage rise in 2019 (from 400 euro to 555 euro) is mainly a by-product of the social security contributions reform²⁷ (without this reform, the minimum wage would increase to 440 euro only).

Therefore, when considering further minimum wage rises, account should be taken

²⁷ Lithuanian employers were obliged to raise gross wages by 28.9% as from the beginning of 2019 (with no changes in net wages) since a significant part of social security contributions was transferred from employers to employees. As a result, the gross minimum wage in Lithuania (where social security contributions are paid mainly by employees) is no longer directly comparable to the gross minimum wage in Latvia (where social security contributions are paid mainly by employees).

not only of its ratio to the average wage or superficial international comparisons but also of the whole wage distribution to ensure that minimum wages do not distort the labour market segment of low wage earners.

3.4 Targeting particular regions and population groups

Capital cities typically have higher participation and lower unemployment rates than other regions of a country, and the Baltic countries do not constitute exceptions²⁸. Regional disparities in terms of labour market performance indicators are large in all three Baltic countries. The employment rate difference between the NUTS-3 regions with the highest and the lowest employment rate within a country was 12–17 pp in 2018 (see Chart 24). For instance, while the employment rate in the Latvian capital city Riga is similar to the record-high levels observed in Sweden and Germany, it is close to the level of Spain in the eastern part of Latvia (Latgale). Regions with relatively high incidence of unemployment tend to have also low participation rates. For instance, Latgale has both the highest unemployment and lowest participation rates among Latvia's NUTS-3 regions.

Weak labour market performance of some Baltic regions cannot be explained by a single factor (for instance, a low level of human capital). On the one hand, there is insufficient evidence that education of Latgale inhabitants differs much from that of the rest of Latvia's population in terms of quantity or quality. As regards mean years of schooling, Latgale lags behind only Riga; secondary school centralised state exam scores in Latgale are not lower either when taking into account all other factors associated with the exam scores (Krasnopjorovs (2019)). On the other hand, the multiplicative effects of regions and education on unemployment are clearly apparent. The demand for employees with a tertiary education degree is similar in all regions of Latvia; unemployment is below 5% everywhere, including Latgale (see Chart A34). In turn, the unemployment rate among people with basic education differs substantially between regions, i.e. in Latgale it is close to 30%, which is three times higher than in the suburbs of Riga (Pieriga). Therefore, people with a low level of education are most affected by the regional unemployment differences. Two possible remedies are either retraining of Latgale inhabitants having an inadequate education level or promotion of their mobility to other regions of Latvia. In turn, the creation of very-low-paid temporary public sector jobs in disadvantaged regions (which is a common practice in Latvia) tends to freeze the current labour market conditions.

The high unemployment rates in Latgale (Latvia) and Ida-Viru (Estonia) cannot be fully explained by the fact that a large share of inhabitants living in these regions are ethnic minorities. For instance, unemployment in Latgale is higher (and the participation rate – lower) also among Latvians. The fact that a lower employment rate of ethnic minorities is very common internationally does not mean that this should always remain the case. Recall that women's participation in the labour market was also relatively rare 100 years ago. Therefore, a low employment rate of ethnic minorities in Latvia and Estonia²⁹ is higher than among ethnic minorities, and the difference remains broadly unchanged over the post-crisis period (see Chart 25).

²⁸ In Lithuania, the capital city region (Vilnius) has not always been the best performer: at the end of the 1990s, unemployment rates in Vilnius were among the highest in the country, while the employment rate was one of the lowest. Since then, labour market performance has improved significantly.

²⁹ To our best knowledge, the respective data for Lithuania are not publicly available.





Sources: Central statistical offices of Latvia, Estonia and Lithuania.

Notes. Data are not directly comparable between the countries. For instance, all data on Latvia and Estonia refer to the age group 15–74, while in Lithuania the participation and employment rates refer to the age group 15–64 but the unemployment rate – to the population older than 15 years. Moreover, the unemployment rate in Estonia reflects the average value for the period 2016–2018 since the 2018 data were not available for some regions.



Chart 25 Latvia and Estonia: labour market performance indicators by ethnicity (%)

Sources: Central statistical offices of Latvia and Estonia.

In Latvia, the employment rate difference between the ethnic majority and ethnic minorities is bigger than in Estonia (8 pp and 5 pp respectively). Latvians have been employed more often than non-Latvians over the entire post-crisis period, reflecting both higher labour market participation of Latvians and lower unemployment. Note, however, that the employment rate among Latvians and non-Latvians was rather similar during the short period of economic overheating just before the crisis. The emergence of an ethnic gap in the employment rate may reflect the different exposure of economic sectors to the crisis, i.e. the construction and private sectors, where in general over-proportional employment of non-Latvians prevailed, experienced

more sizeable layoffs during the crisis, while dismissals were less common in the public sector characterised by over-proportional employment of Latvians. A similar employment rate between the ethnic majority and ethnic minorities during the precrisis period was also observed in Estonia.

It should also be noted that ethnic differences in the employment rate are not driven by a particular age group. For instance, in Latvia, unemployment among non-Latvians is consistently higher than among Latvians in every age group. Regarding the participation rate, the difference appears after the age of 40, while younger Latvians and non-Latvians are similarly active in the labour market (see Chart A35).

The ethnic gap in the employment rate is only partly driven by the fact than some non-Latvians are also non-citizens. While it is true that employment of non-Latvian non-citizens and citizens of other countries is lower than that of both Latvians and non-Latvian citizens, there also exists an employment rate gap between Latvians and non-Latvians who are citizens of Latvia. Again, the ethnic gap in the employment rate is observed both for young, prime age and upper-middle-aged population (see Chart A36). This suggests that the ethnic gap in the employment rate is likely to persist (rather than vanish on account of generation renewal) without a special policy targeted at national minorities, and the respective labour reserves might not be fully accessed.

CONCLUSIONS

This paper investigates internal and external labour reserves in Latvia, Estonia and Lithuania, the three Baltic countries that have experienced a chronic shortage of jobs for years, but currently, as a result of recent robust economic growth and ongoing emigration to wealthier EU countries, are facing an ever-increasing labour shortage. Although cyclical unemployment is currently almost non-existent and natural unemployment has decreased somewhat during the last 15 years – an observation supported by the leftward shifts of the Beveridge and Phillips curves as well as shrinking labour market mismatches – the natural rate of unemployment of about 6%–8% is still well above the best performing EU countries. We also find considerable internal labour reserves in the form of hidden unemployment as many economically inactive people are available for work but not actively engaged in job seeking.

International comparisons with the EU best performing countries reveal that the employment rate is particularly low among upper-middle-aged men. The employment rate of men aged 45–59 is almost 10 pp lower in Latvia and Lithuania than in their EU peers. Underemployment is particularly severe among the upper-middle-aged men without a tertiary education degree. Their employment rate is one of the lowest in the EU, which is likely to reflect a low incidence of lifelong learning, insufficient digital skills and a rapidly deteriorating health condition.

We also document low youth employment, mirroring a low prevalence of apprenticeships. In all three Baltic countries, the youth (aged 15–19) employment rate is 20–25 pp lower than in their EU peers, and this gap is broadly similar among young men and women. Lithuania and Latvia are characterised also by a postponed entry of young women (aged 20–24) into the labour market. In Estonia, employment of women in fertile age in the age group 25–44 holding a tertiary education degree is low.

Our estimates suggest that internal labour reserves currently exceed 25 thousand people in Estonia, 55 thousand in Latvia and 85 thousand in Lithuania. This corresponds to 4%–7% of total employment in these countries. A particular targeting of ethnic minorities and people living in disadvantaged regions is essential for activating internal labour reserves as labour market performance differs substantially by region and is considerably worse for ethnic minorities.

So far the impact of shrinking population and the share of working age population has been offset by a rapid increase in the participation rate and falling unemployment. However, the recent upturn in the participation rate was partly driven by a changing population age structure – an effect which is likely to reverse in the following years. Therefore, without deeper activation of internal labour reserves, the number of people employed is going to shrink in Latvia and Lithuania in the nearest future.

We also identify two important sources of external labour reserves, one of them being more than half a million adult Baltic nationals currently residing in wealthier EU countries. The ongoing income convergence and moderate labour shortage in the Baltics provide positive conditions for remigration. Brexit might further intensify return migration to Latvia and Lithuania as the UK was the most popular emigration destination for inhabitants of these countries since the beginning of the century. Additional external labour reserves can be found in several neighbouring non-EU countries with significantly lower wages, e.g. Ukraine, Russia and Belarus.

APPENDIX

Table A1 Rankings of universities in the Baltic countries (in bold) and Finland

Country	University	Ranking in 2019
Finland	University of Helsinki	110
Finland	Aalto University	140
Finland	University of Turku	285
Estonia	University of Tartu	321
Finland	University of Jyvaskila	336
Finland	Tampere University of Technology	366
Finland	University of Oulu	376
Finland	University of Eastern Finland	481
Lithuania	Vilnius University	488
Finland	Lappeenranta-Lahti University of Technology	521–530
Finland	Åbo Akademi University	531–540
Lithuania	Vilnius Gediminas Technical University	581-590
Finland	University of Tampere	601–650
Estonia	Tallinn University of Technology	601–650
Latvia	Riga Technical University	751-800
Lithuania	Kaunas University of Technology	751-800
Latvia	University of Latvia	801–1000
Estonia	Tallinn University	801-1000
Latvia	Rīga Stradiņš University	801-1000
Lithuania	Vytautas Magnus University	801–1000

Source: QS World University Rankings 2019.

Note. The table includes only the universities reflected in the QS World University Rankings 2019.





Chart A2

Participation rate in the EU countries: headline and adjusted for the population age structure (in 2018)



Participation rate assuming EU-average age structure



Source: Author's calculations based on Eurostat data.

Chart A3

Unemployment structure by duration in the Baltic countries (%; in 2018)



Source: Eurostat data.



11

09

15

Chart A4 Beveridge curves for the Baltic countries



With data on labour shortage claims

Unemployment rate (%)

13 12

09

15

2.0

1.5

1.0

0.5

Lithuania

1.4

1.0

0.6

0.2

5

Vacancy rate (%)

5

6

17

08

13

10

4

10

Unemployment rate (%)

15

Vacancy rate (%)

Source: Author's calculations based on Eurostat and EC data. Note. The numbers near the dots represent years over the period 2002–2018.



Chart A5 Phillips curves for the Baltic countries





Source: Author's calculations based on Eurostat data. Note. The numbers near the dots represent years over the period 2002-2018.

Chart A6 **Hidden unemployment indicators in the EU countries** (in 2018)

Discouraged workers



Persons seeking work but not immediately available (% of employed population)



Source: Author's calculations based on Eurostat data.

Persons available to work but not seeking (% of employed population)



Underemployed part-time workers (% of employed population)



Chart A7

Employment rate difference from the EU7 decomposition by the level of formal education (pp; contributions; age 15–64)



• Employment

Source: Author's calculations based on Eurostat data.



Chart A8 **Age 15–19: employment rate difference from the EU7 decomposition by gender** (pp; contributions)

• Employment



Chart A9 **Age 20–24: employment rate difference from the EU7 decomposition by gender** (pp; contributions)

Source: Author's calculations based on Eurostat data.



Chart A10 **Age 40–44: employment rate difference from the EU7 decomposition by gender** (pp; contributions)

Source: Author's calculations based on Eurostat data.





Employment

•



Chart A12 **Age 50–54: employment rate difference from the EU7 decomposition by gender** (pp; contributions)



Chart A13 **Age 55–59: employment rate difference from the EU7 decomposition by gender** (pp; contributions)



Chart A14 **Age 60–64: employment rate difference from the EU7 decomposition by gender** (pp; contributions)

•

Employment

Source: Author's calculations based on Eurostat data.







Lithuania

• EU7

Women







Estonia

Latvia

Men

Age 30-34



Lithuania

• EU7

T

Estonia

📕 Latvia

Men

Women









Relative to Ireland

Source: Author's calculations based on Eurostat data.

Chart A16

Relative to the UK

The Baltic countries vs the UK and Ireland: unemployment rate and wages

Average monthly gross wage in the Baltic countries (% of minimum wage in the UK and Ireland)





Source: Author's calculations based on Eurostat data and those of the central statistical offices of Latvia, Estonia and Lithuania. Note. Lithuanian average wage data over 2002–2004 are not available.

Chart A17

Emigration from the Baltic countries

(thousands of people; by year)



Ireland: new personal public service numbers issued

Chart A18

Stock of physical capital per worker in the Baltic countries

(% of Germany's indicator; adjusted for purchasing power parity)



Source: Author's calculations based on Penn World Tables 9.0 (Feenstra et al. (2015)).

Source: Eurostat and Irish Department of Employment Affairs and Social Protection data.



Chart A19 International long-term immigration to Latvia by citizenship of immigrants (incl. remigration of citizens of Latvia)



Mean years of schooling in the Baltic countries and the EU7



Source: Global Competitiveness Report 2018 data (component 6.01).

Chart A21 **Unemployment rate by education level in the Baltic countries** (% of economically active population)



Source: Eurostat data.

Chart A22

Economic activity of population in the Baltic countries by education level (%; in 2018)







Source: Eurostat data.





Chart A24 **PISA scores in the Baltic countries and the EU7** (in 2015)



Source: OECD data (PISA 2015).





Source: OECD (PISA 2015) and Global Competitiveness Report (2017, 2018) data. Notes. The values of GCI components are reflected in the chart where 7 represents the best performance in the world, while 1 represents the worst performance.

The following indicators were taken from the GCI 2018:

- Extent of staff training (component 6.02): In your country, to what extent do companies invest in training and employee development?
- Quality of vocational training (component 6.03): In your country, how do you assess the quality of vocational training?
- Skillset of graduates (component 6.04): In your country, to what extent do graduating students possess the skills needed by businesses at the following levels: a. Secondary education; b. University-level education.
- Digital skills among active population (component 6.05): In your country, to what extent does the active population possess sufficient digital skills (e.g. computer skills, basic coding, digital reading)?
- Ease of finding skilled employees (component 6.06): In your country, to what extent can companies find people with the skills required to fill their vacancies?
- Critical thinking in teaching (component 6.08): In your country, how do you assess the style of teaching? [1 = frontal, teacher based, and focused on memorizing; 7 = encourages creative and critical individual thinking]

The following indicators were taken from the GCI 2017:

- Quality of the education system (component 5.03): In your country, how well does the education system meet the needs of a competitive economy?
- Quality of math and science education (component 5.04): In your country, how do you assess the quality of math and science education?
- Quality of management schools (component 5.05): In your country, how do you assess the quality of business schools?

Chart A26

Digital skills and lifelong learning indicators in the Baltic countries and the EU7

Share of individuals who have at least basic digital skills (%)





Source: Author's calculations based on Eurostat data.

Chart A27

Labour market policy spending in the Baltic countries and the EU7 (% of GDP; in 2016)



Difference with the EU7 (pp of GDP)



Source: Author's calculations based on OECD data.

Chart A28 Life expectancy and self-perceived health status of upper-middle-aged men

Life expectancy of 50 years old men (years; in 2016)





Source: Author's calculations based on Eurostat data.

Chart A29

Lifestyle of men aged 25–44 in the Baltic countries by income quintile (%; in 2014)



Source: Author's calculations based on Eurostat data.

Notes. The EU7 includes Germany, Austria, Denmark, the Netherlands, Sweden, Czechia and the UK.

Data for aerobic physical activity in the Netherlands were not available.

The 1st quintile represents 20% of the population with the lowest income, while the 5th quintile -20% of the population with the highest income.



Chart A30 **Self-perceived health status in the Baltic countries and the EU7 by age group** (in 2017: index: +200 very good: +100 good: 0 fair: -100 had: -200 very had)



Chart A31

The effective tax rate on labour income by household composition (%)



Married couple with one earner earning 100% of average wage, with two children







Married couple with two earners earning 100% of average wage each, with two children



Married couple with two earners earning 100% of average wage each, without children



Source: Eurostat data.



Austria

Denmark

Chart A32 Effect of taxation on incentives to work in the Baltic countries and the EU7

Source: Author's calculations based on Global Competitiveness Report (2017) data.

Latvia

Lithuania

Notes. The chart reflects GCI 2017 component 7.05: In your country, to what extent do taxes and social contributions reduce the incentive to work? (1 = to a great extent; 7 = not at all).

-0.6

Chart A33 **Minimum monthly wage** (euro)

Estonia

UK

Germany

Sweden

Czechia

Netherlands

2.0





In the Baltic countries over 2008-2019



Source: Eurostat data.

Estonia Latvia

Lithuania

Chart A34 **Latvia: unemployment rate by NUTS-3 regions and education level** (% of economically active people; in 2018)





Source: Author's calculations based on CSB data.

Chart A35

Latvia: participation and unemployment rates by ethnicity and age groups (%; in 2015)







Source: Author's calculations based on CSB data.



Chart A36 **Latvia: employment rate by ethnicity, citizenship and age group** (%; in 2015)

Source: Author's calculations based on CSB data.

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